INTERNATIONAL HARMONIZED RESEARCH AGENDA (I.H.R.A.)

Rome, 24/2/98

STATUS REPORT ON THE 2ND ADVANCED OFFSET FRONTAL CRASH PROTECTION GROUP
(Based on the results of the meeting held in Madrid on 23/01/98)

Participants: C. Lomonaco (Chairman, Ministry of Transport of Italy), E. Faerber (EEVC WG15), R. Lowne (EEVC WG.16), A. Hobbs (for Mr. Rodgers - IHRA Compatibility), Andrew Lie (EEVC WG16), George Neat (EEVC WG.15 - Volpe Center /US DOT), Yoshiti Kadotani (Japan MOT), Tom Hollowell (US -NHTSA).

INTRODUCTION

The chairman resumed to the participants the scope of the meeting and asked comments around the table.

The state of the work progress in US was been reported by Mr.Hollowell and resumed into document IHRA/afc-7 . As a consequence NHTSA will carry out tests with depowered Air-Bags using a 5th% female dummy and a test speed of 60km/h.

From the European side Mr. Lowne put forward some corrections concerning the main aspects of research that in the last meeting were drawn. One of the most prominent changes was that Australia took part as one of the very last country involved in IHRA working program.

Accordingly the previous table with the topics of interest was changed by the group as follows:

WORKING MATTER	USA	CAN	EEVC	J	AUS
Trolley	X				
Types of barriers	X	X			X
-stiff	x	x			x
-deformable	x	x			x
Impact angle	X				
Dummy	X	X	X		X
5%ile female	x	x			x
95%ile male	x	x			
Impact speed	X	X	X		X
Performance criteria	X	X	X		X
-footwell intrusion	x		x		x
-steering wheel intrusion	x		x		
-abdomen injury detection		x			
-arm injury		x			
Air-Bag performance	X	X			X
-Deployment time & effects.		x			
Extension to vehicle of category N1.			X		

DISCUSSION.

Mr. Hollowell noted that NHTSA was planning a two stage approach to future frontal requirements: in the short term it was studying the potential benefits of the EEVC frontal test procedure under the US conditions while in the longer term, as a second stage, a new test procedure based on a mobile barrier, probably with an angled approach, was envisaged. It appears that the EEVC test procedure may offer advantages to the USA if used with a 5^{th}%ile female dummy, based on the dummy transducer readings in some preliminary tests. If the first stage (adoption of a modified EEVC test procedure) proves to have not potential benefit for the USA, the first stage would be abandoned and work would concentrate on the second stage.

Mr.Lowne confirmed that EEVC is going toward the solution of a fixed barrier but he added that also the advantages of the mobile barrier will be verified.

In order to define these procedures the discussion went forward on a comparative analyses method. As a result of the discussion the following table was achieved:

Table 2 Trolley-based Frontal Offset Impact Test Procedure

ADVANTAGES	**ALTERNATIVE APPROACH TO ACHIEVE SAME ADVANTAGE WITH FIXED BARRIER**
1. Takes into account the effects of the Mass Ratio of the impacting vehicles	Change impact speed with vehicle mass.
2. Can include angular effects on the deformation and intrusion characteristics	No known alternative
3. Can include a possible measure of Compatibility (by, for instance, measuring the vehicle and/or trolley acceleration).	Measure the force on the fixed barrier behind the deformable face.
4. The acceleration pulse, ΔV and energy distribution is 'correct'.	No known alternative
Disadvantages	**POSSIBLE ACTIONS TO REDUCE THE DISADVANTAGE**
1. Complex test procedure for "moving barrier-moving car" (High speed trolley vibrations, difficulties to videorecord impact effects between mobile trolley and car)	⎫ Reduce complexity by testing co-linearly and/or
2. Repeatability of more complex test may be poor (for "moving barrier-moving car")	⎭ using moving barrier to stationary car?
3. Limited number of test laboratories with capability to perform trolley - to - vehicle testing.	Investigate.
4. Unknown ground and other interaction effects, especially if one vehicle stationary while the other travels at higher speed - to represent both vehicles moving.	?
5. Need to agree on a harmonised barrier mass when vehicle fleet differs internationally.	Agree to differ

The chairman emphasised to the group the real issue that is which level is to achieve with harmonisation and in order to start with future discussions on this item it was suggested that a

delegation from car manufacturers should be invited in the next meetings. The group agreed on this decision.
Mr.Lowne took into consideration the proposal from Mr. Hollowell that is a new work plan based on a 5th% female dummy and a test speed of 60km/h. This proposal has been presented in the last meeting of EEVC WG16 in these terms:

1. a review of the potential benefits of using a fifth percentile female dummy in the EEVC test procedure.
2. the potential benefits of using a mobile barrier
3. provide indications of possible modifications to the EC test procedure based on the accident studies for the EC, subject to EC approval to release results early.

COMMITMENTS.

Whereas there is no experience of the feasibility of the US test with a high speed trolley, the chairman in order to collect a larger range of point of views will put in by OICA if from that side somebody can take on this test.

NHTSA will prepare on the base of former document IHRA/afc-2, a further consolidated document which set the US research program.

The date of the next meeting has been roughly scheduled by the beginning of June.

Best regards,

Claudio Lomonaco

DIREZIONE CENTRALE IV
DIVISIONE 40

Roma, 2 march 1998

To the attention of Mr. T. Diupero.
Automotive Industry Institute,
ul Jageiellonska 55, 03 301 Warzawa,
POLAND.

MESSAGE OF APOLOGIZES

Dear Mr. Tadeusz Diupero,
We are really sorry for the unforgivable mistake to have not invited you. Cause a setback, we have used the list of participants of the last meeting to deliver the new invitation to the meeting. Accordingly we have forgotten to complete the list of distribution with your name as well.
With the present letter we beg your pardon and we put in to your attention the report of the last meeting.

Best regards,

Claudio Lomonaco